Andrew L. Valesano, MD, PhD

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Medical Training and Education

Resident Physician / Michigan Medicine
Anatomic and Clinical Pathology
July 2023 – June 2027

Medical Scientist Training Program / University of Michigan
Doctor of Medicine (M.D.)
Doctor of Philosophy (Ph.D.)
July 2016 – May 2023

Bachelor of Science / Hope College
Biology, *summa cum laude*
August 2011 – May 2015

Work Experience

Postdoctoral Researcher / Michigan Medicine
Department of Pathology
July 2023 – June 2027

- Generate and apply weakly-supervised models to detect precancerous epithelial lesions in fallopian tube resections
- Perform methylation profiling and genomics for EBV-related lymphoproliferative disorders and histiocytic disorders

Ph.D. and Postdoctoral Researcher / University of Michigan
Department of Microbiology and Immunology
August 2018 – September 2021

- Developed next-generation sequencing methods to characterize viral genetic variation within infected patients and transmission pairs
- Sequenced over 6000 SARS-CoV-2 genomes to track novel variants, mitigate local outbreaks in real-time, enhance hospital monoclonal antibody stewardship, and study vaccine effectiveness
- Investigated the first case of donor-derived COVID-19 via lung transplantation, which modified lung transplant guidelines
- Characterized within-host oral polio vaccine genetic variants from 271 participants in a clinical trial of vaccine transmission
- Published 5 first/co-first author papers and 14 papers as co-author in journals including *Cell*, *Cell Host and Microbe, JAMA*, *Clinical Infectious Diseases*, and *American Journal of Transplantation*

Research Technician / Michigan Medicine
Department of Neurology
May 2015 – June 2016

- Examined the role of mitochondrial dysfunction in diabetic neuropathy with live-cell confocal microscopy of sensory neurons

Other Skills and Training

Data Science and Computational Pathology / R, Python, UNIX, high performance cluster computing, git, Docker, Singularity, conda, RMarkdown, Slideflow, CLAM

Molecular Biology and Genomics / Nucleic acid extraction, PCR, western blotting, Sanger sequencing, site-directed mutagenesis, Illumina sequencing and analysis, Oxford Nanopore sequencing and analysis, and phylogenetic analysis

University of Washington Summer Institutes in Statistics / Supervised and unsupervised machine learning, biomarkers and risk models, maximum likelihood and Bayesian modeling

Teaching Experience

Assistant Instructor, Translational Pathology (2023)

Graduate Instructor, Introduction to Microbiology (2020)

Honors and Recognition

Dean's Award for Research Excellence (2023) – *To two graduating students with outstanding research contributions*

Academic Recognition Award (2023) – *To the top five graduating medical students in each class*

Barry M. Goldwater Scholarship (2014)